

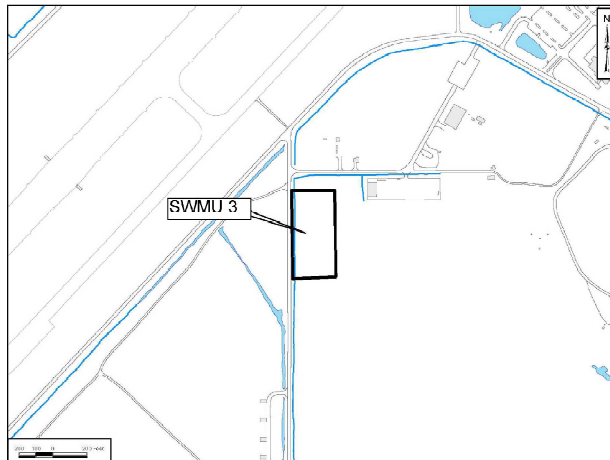
N60201.AR.002777
NS MAYPORT
5090.3a

STATEMENT OF BASIS FOR SOLID WASTE MANAGEMENT UNIT 3 NS MAYPORT FL
4/14/2014
TETRA TECH

STATEMENT OF BASIS
Solid Waste Management Unit 3
Naval Station Mayport
Jacksonville, Florida

USEPA ID #FL9 170 024 260

April 14, 2014



Facility/Unit Type: Naval Station

Contaminants: **Surface Soil** - No contaminants exceeding residential Cleanup Target Levels; **Subsurface Soil** - Buried waste, arsenic, chromium, benzo(a)pyrene; **Groundwater** - Ammonia, iron, and manganese

Media: Soil and Groundwater

Corrective Action: Soil – Institutional Controls and Land Use Controls (LUCs); Groundwater – Long-term Monitoring and LUCs

SUMMARY

The proposed corrective action for **Solid Waste Management Unit (SWMU) 3** at Naval Station (NAVSTA) Mayport is institutional controls and **land use controls (LUCs)** implementation and maintenance for soils, and long-term monitoring (LTM) and LUCs implementation and maintenance for **groundwater**. SWMU 3 has been impacted by buried waste from landfill operations as a surface pit disposal site. The **contaminants of concern (COCs)** identified for SWMU 3 are antimony in **surface soil** and arsenic, chromium, and benzo(a)pyrene in **subsurface soil**. The groundwater for SWMUs 2, 3, 4, 5, and 22 was assessed collectively during the **Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)** because of past waste disposal activities and the potential for similar or related corrective actions. The COCs in groundwater in the SWMU 2, 3, 4, 5 and 22 areas are ammonia, iron, and manganese.

Land use at SWMU 3 is to remain industrial. Non-residential land use restrictions prohibit residential or residential-like uses including, but not limited to, any

form of housing; childcare facilities; any kind of school including pre-schools, elementary schools, and secondary schools; playgrounds; and adult convalescent and nursing care facilities.

LUCs for groundwater will prohibit groundwater use/extraction and will also prohibit any interference with groundwater monitoring systems at SWMUs 2, 3, 4, 5 and 22. The imposition of LUCs would serve to protect human health by prohibiting the use of groundwater until contaminant concentrations allow for unrestricted use and unlimited exposure. Additionally, sampling and analysis of site wells and downgradient wells will be implemented to assess COC attenuation in groundwater. Annual site inspections will be conducted by NAVSTA Mayport personnel to verify the LUCs are being maintained.

The public is invited to comment on this proposed corrective action or any other corrective measure alternative including those not previously studied. Information on how the public may participate in this decision-making process is provided in the Public Participation section of this document.

INTRODUCTION

Pursuant to RCRA, as amended by the 1984 **Hazardous and Solid Waste Amendments** (HSWA), the **Florida Department of Environmental Protection** (FDEP) issued the renewed HSWA **permit** to NAVSTA Mayport on August 17, 2009.

This **Statement of Basis** (SB) identifies the proposed corrective action for SWMU 3, explains why the selected corrective action was chosen, solicits public review and comment on this decision, and provides information as to how the public can be involved in the corrective action selection process. Additional details regarding the facility, environmental investigations, and the evaluation of the **corrective measure** alternatives may be found in the RFI and **Corrective Measures Study** (CMS). These documents are kept as part of the Administrative Record at the **Information Repository**. Refer to the Public Participation section of this document for their location. A glossary, which defines some of the technical terms contained herein, is included at the end of this document.

The corrective measures reflected in this SB are those proposed by the United States Navy and the FDEP for implementation at SWMU 3. Changes to the proposed corrective measure or a change from the proposed corrective action to another appropriate solution will require public participation as described in this document.

PROPOSED CORRECTIVE ACTION

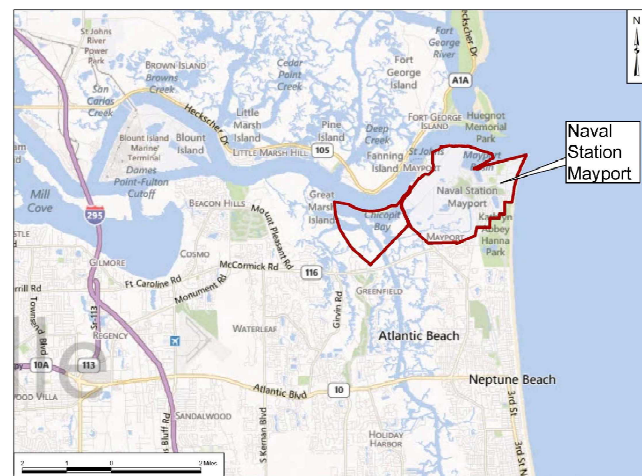
The proposed corrective measure for soil is the implementation and maintenance of LUCs. Land use at SWMU 3 would remain industrial, and unauthorized soil disturbance would be prohibited. The implemented LUC would serve to protect human health by precluding exposure to buried waste and contamination, and serve to prevent contaminant migration to other areas of the base. The proposed corrective measure for groundwater is LUCs and LTM. LUCs for groundwater will prohibit groundwater use/extraction and will also prohibit any interference with groundwater monitoring systems at SWMUs 2, 3, 4, 5, and 22. The imposition of LUCs would serve to protect human health by prohibiting the use of the groundwater until contaminant concentrations allow for unrestricted use and unlimited exposure. Additionally, sampling and analysis of site wells and downgradient wells will be implemented to assess COC attenuation in groundwater. The total present worth cost of the proposed groundwater corrective measure is \$446,000, which includes capital cost and monitoring cost over a 30-year period.

As required by NAVSTA Mayport's RCRA permit, the Navy will develop a **Corrective Measures Implementation Plan** (CMIP) for this SWMU, with FDEP concurrence, following selection of the final corrective measure. The CMIP will specify procedures for the future long-term oversight and maintenance of the LUCs to be imposed in the area of SWMU 3. The Station will ensure that these or similar instructions, processes, and requirements are complied with for all activities at SWMU 3 under the NAVSTA Mayport site approval process and/or the excavation permit process. NAVSTA Mayport will also conduct periodic inspections to confirm that the LUCs are complied with and report the results of those inspections to the FDEP. All processes, site inspections, and reporting activities will be conducted pursuant to specific requirements to be set forth in an approved CMIP for the site. The proposed LUC corrective action at SWMU 3 will ensure future protection of human health and the environment.

FACILITY BACKGROUND

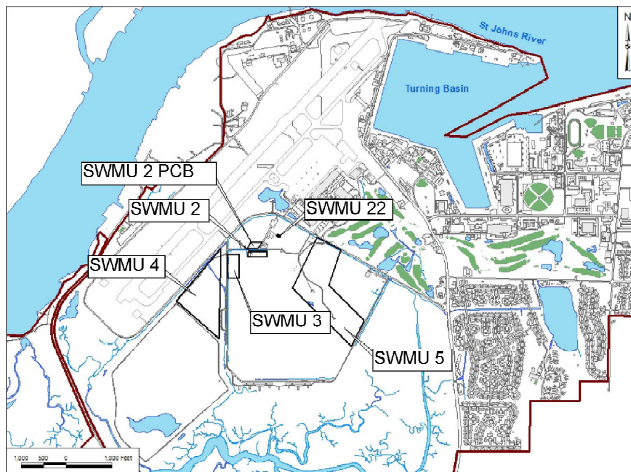
NAVSTA Mayport is located near the town of Mayport within the city limits of Jacksonville, Florida, in northeastern Duval County on the southern shore of the confluence of the St. Johns River and the Atlantic Ocean (see Figure 1). SWMU 3 is located in the southwestern portion of NAVSTA Mayport (see Figure 2).

Figure 1. Naval Station Mayport Location Map



SWMU 3 (Landfill D) was operated from 1963 to 1965 as a surface pit disposal site. The pits were approximately 40 feet long by 40 feet wide and 8 feet below ground surface. The pits excavated at the landfill site intersected the water table, and wastes were placed below the water level in the surficial **aquifer**. Currently, SWMU 3 consists of a wooded area and a portion of the Confined Disposal Facility.

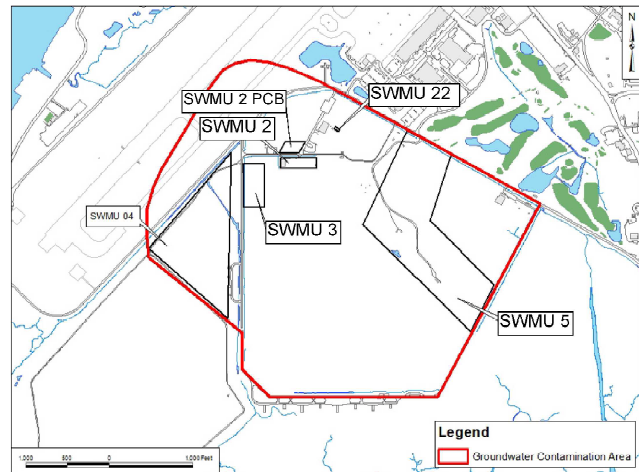
Figure 2. SWMU Location Map



The investigation at SWMU 3 was conducted by ABB Environmental Services, Inc. between 1992 and 1994 as part of the Group I field investigation activities. Field activities consisted of collection of surface and subsurface soil samples, installation of monitoring wells, and collection of groundwater samples. During the RFI, 3 surface soil and 13 subsurface soil samples were collected and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), inorganics, and pesticides by a fixed-base laboratory. No additional investigation has been performed at this SWMU since the RFI. No surface soil borings at SWMU 3 exceeded Soil Cleanup Target Levels (SCTLs) or NAVSTA Mayport Background Screening Values (BSVs). Several subsurface soil borings exceeded the arsenic, chromium, and benzo(a)pyrene SCTLs or NAVSTA Mayport BSVs.

Initial groundwater samples taken in 1992 and 1994 were analyzed for VOCs, SVOCs, inorganics, and pesticides/miscellaneous parameters. Long-term monitoring (LTM) groundwater samples were most recently collected in 2010 and 2011 and were analyzed for inorganics and miscellaneous parameters. Groundwater sample results from the LTM sampling were compared to the FDEP Groundwater Cleanup Target Levels (GCTLs) and the NAVSTA Mayport BSVs. Ammonia, chloride, iron, manganese, sodium, and sulfate exceeded GCTLs in 11 wells. The groundwater in the area of SWMUs 2, 3, 4, 5 and 22 is hydraulically connected with tidally influenced surface waters. The sample results for ammonia, chloride, sodium, and sulfate are consistent with marine waters; therefore, the FDEP accepted removing chloride, sodium, and sulfate as COCs in 2012. Figure 3 indicates the area of groundwater contamination.

Figure 3. Groundwater Contamination Area



SUMMARY OF FACILITY RISKS

A **Human Health Baseline Risk Assessment** and an **Ecological Risk Assessment** were performed as part of the RFI. The FDEP Cleanup Target Levels (CTLs) are based upon human health risk criteria. Sample results that exceed the FDEP CTLs indicate a potential concern for SWMU 3.

Human Health Risk Assessment

Preliminary risk characterization for SWMU 3 was conducted for potential exposures to soil and groundwater under current and future land-use scenarios.

Soil. Buried waste remains at SWMU 3. Antimony exceeded the leachability SCTL in the surface soil; however, it was not detected in the corresponding subsurface soil or in the groundwater. In the subsurface soil, arsenic, chromium, and benzo(a)pyrene were identified as COCs.

Groundwater. Groundwater sample results from the LTM sampling were compared to the FDEP GCTLs and the NAVSTA Mayport BSVs. Ammonia, chloride, iron, manganese, sodium, and sulfate exceeded GCTLs in 11 wells. The groundwater is hydraulically connected with tidally influenced surface waters, and chloride, sodium, and sulfate were removed as COCs. Remaining COCs in groundwater are ammonia, iron, and manganese.

Ecological Assessment

Soil. Exposure of terrestrial receptors to potential contamination in surface soil was not evaluated in the RFI due to the lack of habitat and industrial land use. No pathway for ecological exposure to subsurface soils was identified.

Groundwater. Groundwater was not determined to be a potential risk to ecological receptors.

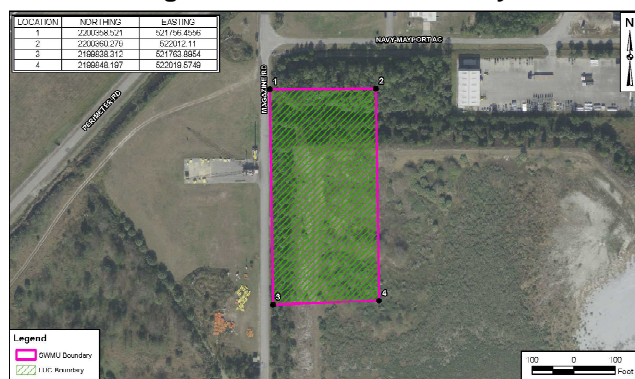
Surface Water and Sediment. The screening level ecological risk assessment concluded that no adverse ecological risks exist for these media.

SCOPE OF CORRECTIVE ACTION

Antimony is identified as a COC in the surface soil at SWMU 3. Buried waste remains at SWMU 3. Arsenic, chromium, and benzo(a)pyrene are identified as COCs in subsurface soil. The proposed corrective action is institutional controls and implementation and maintenance of LUCs. Figure 4 shows the soil LUC boundaries.

Ammonia, iron, and manganese are COCs for groundwater at SWMUs 2, 3, 4, 5, and 22 based on concentrations that exceed the GCTLs in Chapter 62-777, Florida Administrative Code. LUCs will be required for groundwater at SWMU 3 until contaminant concentrations allow unrestricted use and unlimited exposure.

Figure 4. Soil LUC Boundary



SUMMARY OF ALTERNATIVES

An evaluation of the following corrective measure alternatives for SWMU 3 was conducted in accordance with the final RCRA Corrective Action Plan Guidance (United States Environmental Protection Agency [USEPA], May 31, 1994, Office of Solid Waste and Emergency Response [OSWER] Directive 9902.3-2A).

Alternatives

Soil Alternative 1: No Action. The No Action alternative addresses SWMUs that do not require remediation.

Soil Alternative 2: Institutional Controls, Cover, and Site Monitoring. Land use at SWMU 3 would remain industrial, and soil disturbance would be prohibited. The

implemented LUC would serve to protect human health by precluding exposure to buried waste and contamination, and serve to prevent contaminant migration to other areas of the Station. This alternative would impose LUCs in the form of unauthorized soil disturbance prohibition at the SWMU. Once implemented, certain procedures would be set in place to ensure that the LUCs continue to be maintained via preparation of a SWMU-specific CMIP. This implementation plan will provide for periodic inspection and reporting requirements.

Groundwater Alternative 1: No Action. The No Action alternative serves as a baseline consideration or addresses SWMUs that do not require remediation.

Groundwater Alternative 2: LTM and LUCs. This alternative would impose LUCs in the form of a groundwater use/extraction prohibition. It would also prohibit any interference with groundwater monitoring systems at the SWMU. The imposition of groundwater LUCs would serve to protect human health by prohibiting the use of groundwater until contaminant concentrations allow unrestricted use and unlimited exposure. Additionally, sampling and analysis of downgradient wells will be implemented to assess COC attenuation in groundwater. Once implemented, certain procedures would be set in place to ensure that the LUCs continue to be maintained via preparation of a SWMU-specific CMIP. This implementation plan will provide for periodic inspection and reporting requirements. LTM would consist of routine sampling of groundwater and comparison of analytical results against FDEP GCTLs. The details of the monitoring program will be presented in the CMIP; however, for cost estimating purposes, it is assumed that 11 monitoring wells will be sampled quarterly for 1 year, semiannually for years 2 through 5, and then annually thereafter until GCTLs are achieved or periodic data reviews determine alternative courses of action are necessary.

EVALUATION OF THE PROPOSED REMEDY AND ALTERNATIVES

The identified corrective measure alternatives were evaluated using the criteria contained in the Final RCRA Corrective Action Plan Guidance (USEPA, May 31, 1994, OSWER Directive 9902.3-2A). Four criteria and five other factors were used to evaluate the corrective measure alternatives. These criteria and factors are as follows:

Criteria

- Protect Human Health and the Environment
- Attain Media Cleanup Standards
- Source Control
- Waste Management Standards

Other Factors

- Long-term Reliability and Effectiveness
- Reduction in Toxicity, Mobility, or Volume
- Short-term Effectiveness
- Implementability
- Cost

Tables 1 and 2 summarize the evaluation of the corrective measure alternatives for SWMU 3 as performed in the CMS Report.

RECOMMENDATIONS

Based on the screening of technologies and assessment of various alternatives performed, Soil Alternative 2 is preferred for addressing the subsurface soil contamination, and Groundwater Alternative 2 is preferred for addressing groundwater contamination.

Soil Alternative 2 would implement institutional controls and LUCs to restrict the site to non-residential use only, and it would also prohibit any unauthorized surface and subsurface soil disturbance at the SWMU. No contaminants in surface or subsurface soil exceeded SCTLs for industrial direct exposure. Without any industrial exceedances, LUCs would provide adequate and cost-effective protection of human health and the environment.

The preferred groundwater corrective measure alternative involves LUCs and LTM to address groundwater contamination. LUCs would prohibit the use of the groundwater until contaminant concentrations allow for unrestricted use and unlimited exposure. Additionally, sampling and analysis of the site wells and downgradient wells will be implemented to assess COC attenuation in groundwater.

PUBLIC PARTICIPATION

To make a final decision and incorporate corrective measures into the HSWA permit, the FDEP is soliciting public review and comment on this SB for the proposed corrective action for SWMU 3 at NAVSTA Mayport. The 40 Code of Federal Regulations (CFR) 124.10(6) requires a 45-day comment period for a permit modification request made by the permittee under RCRA. The FDEP has undertaken the lead role on this request initiated by the Navy (the permittee). The comment period will begin on April 14, 2014, and will be published in the *Jacksonville Daily Record*.

Copies of the RFI, CMS Report, and the SB are available for public review at the Information Repository located at the Jacksonville Public Library - Beaches Branch, 600 3rd Street, Neptune Beach, Florida, 32266 [Phone (904) 241-1141].

A public hearing will be held if one is requested. To request a public hearing, to obtain more information about this SB, or to submit written comments, please contact Paul Malewicki or John Winters (contact information provided below).

All comments must be postmarked no later than May 30, 2014.

CONTACT

NAVY

Paul Malewicki
Environmental Department
Naval Station Mayport
Jacksonville, FL 32228-0067
(904) 270-3188
Paul.G.Malewicki@navy.mil

FDEP

John Winters, PG (MS 4535)
FDEP, Bob Martinez Center
Federal Programs Section
2600 Blair Stone Road
Tallahassee, FL 32399-2400
(850) 245-8999
John.Winters@dep.state.fl.us

Next Steps

Unless otherwise indicated, the FDEP will modify the HSWA permit to incorporate the final decision on the RCRA permit modification request when the permit is renewed. The final decision will detail the corrective measure chosen for SWMU 3 and will consider comments received during the **public comment period** in a **Response to Comments Summary**.

When the permit is modified, notice will be given to the Navy and to each person who has submitted written comments or who has requested notice of the final decision. The final permit decision shall become effective 30 days after the issuance of the notice of the decision unless a later date is specified or review is requested under 40 CFR 124.19. If no comments are received requesting a change in the draft permit, the final permit modification shall become effective immediately upon issuance.

TABLE 1. EVALUATION OF SOIL CORRECTIVE MEASURE ALTERNATIVES FOR SWMU 3

Soil Alternative 1: No Action	Soil Alternative 2: Institutional Controls and LUCs
Protect Human Health and the Environment	
Would not be protective of hypothetical future residents because it would not restrict future use to industrial activities.	Would be protective of workers and would restrict the future use to industrial.
Attain MCS	
May attain residential standards over time, but the SWMU already meets industrial standards.	LUCs would not attain clean-up standards for residential use. LUCs would manage unacceptable risks.
Source Control	
No new source control would be implemented.	No new source control would be implemented.
Comply with Waste Management Standards	
No standards for waste management apply as no waste would be generated.	No standards for waste management apply as no waste would be generated.
Long-term Reliability and Effectiveness	
Would not provide long-term reliability and effectiveness because it would not prevent future residential development.	LUCs would provide long-term reliability and effectiveness.
Reduction in Toxicity, Mobility, or Volume through Treatment	
Reduction of toxicity would occur through natural processes, but would not be monitored.	Reduction of toxicity would occur through natural processes over a long period of time, but would not be monitored.
Short-term Effectiveness	
No short-term risks to workers, the community, or the environment.	No short-term risks to workers, the community, or the environment.
Implementability	
Would be readily implementable since no action would occur.	Would be readily implementable.
Cost (Net Present Worth over a 30 year period)	
No corrective action would occur; therefore, there would be no costs.	\$84,000

Shading indicates Proposed Alternative.

TABLE 2. EVALUATION OF GROUNDWATER CORRECTIVE MEASURE ALTERNATIVES FOR SWMU 3

Groundwater Alternative 1: No Action	Groundwater Alternative 2: LTM and LUCs
Protect Human Health and the Environment	
Would do nothing to effectively address contaminated groundwater or control its potential migration to off-site areas.	Would be protective of workers and would restrict the future use to industrial.
Attain MCS	
May attain residential standards over time, but the progress of attenuation would not be monitored.	Would attain clean-up standards for residential use over time provided LUCs are maintained.
Source Control	
Natural attenuation may eventually eliminate the source; however, the potential progress of natural attenuation would not be monitored.	No new source control would be implemented.
Comply with Waste Management Standards	
No standards for waste management apply as no waste would be generated.	No standards for waste management apply as no waste would be generated.
Long-term Reliability and Effectiveness	
Would not provide long-term reliability and effectiveness because it would not prevent future residential development.	LUCs would provide long-term reliability and effectiveness.
Reduction in Toxicity, Mobility, or Volume through Treatment	
Reduction of toxicity would occur through natural processes, but would not be monitored.	Reduction of toxicity would occur through natural processes, principally biodegradation.
Short-term Effectiveness	
No short-term risks to workers, the community, or the environment.	The minimal short-term risks to workers and the environment would be manageable.
Implementability	
Would be readily implementable since no action would occur.	Would be readily implementable.
Cost (Net Present Worth over a 30 year period)	
No corrective action would occur; therefore, there would be no costs.	\$446,000

Shading indicates Proposed Alternative.

KEY WORDS

BSV	Background Screening Value	NAVSTA	Naval Station
CFR	Code of Federal Regulations	OSWER	Office of Solid Waste and Emergency Response
CMIP	Corrective Measures Implementation Plan	RCRA	Resource Conservation and Recovery Act
CMS	Corrective Measures Study	RFI	RCRA Facility Investigation
COC	Contaminant of Concern	SB	Statement of Basis
CTL	Cleanup Target Level	SCTL	Soil Cleanup Target Level
FDEP	Florida Department of Environmental Protection	SVOC	Semivolatile Organic Compound
GCTL	Groundwater Cleanup Target Level	SWMU	Solid Waste Management Unit
HSWA	Hazardous and Solid Waste Amendments	USEPA	United States Environmental Protection Agency
LTM	Long-term Monitoring	VOC	Volatile Organic Compound
LUC	Land Use Control		

GLOSSARY

Aquifer: An underground layer of permeable rock, sediment, or soil capable of storing and transporting water within cracks and pore spaces or between grains.

Contaminant of Concern (COC): A chemical detected in environmental media at a concentration that may adversely affect human health or ecological receptors.

Corrective Measure: The actual construction or cleanup phase following the selection of cleanup alternatives.

Corrective Measures Implementation Plan (CMIP): A written plan normally developed after a decision document that required one or more LUCs or Engineering Controls for some particular area (operable unit, contaminated unit, and/or solid waste management unit). The CMIP (1) identifies each LUC/EC objective for that area (e.g., to restrict public access to the area for recreational use) and (2) specifies those actions required to achieve each identified objective (e.g., install/maintain a fence, post warning signs, record notice in deed records). CMIPs specify what must be done to impose and maintain the required LUCs/ECs and are therefore analogous to design and/or operation and maintenance plans developed for active remedies.

Corrective Measures Study (CMS): An engineering analysis and report that identifies, evaluates, and compares the most appropriate technical approaches for addressing contamination at a SWMU.

Florida Department of Environmental Protection (FDEP): The state agency responsible for implementing Florida environmental laws.

Groundwater: Water found within an aquifer.

Hazardous and Solid Waste Amendments (HSWA): Amendments to RCRA, passed in 1984, which greatly expand the nature and complexity of activities covered under RCRA.

Human Health Baseline Risk Assessment: Study to determine the likelihood that a given exposure or series of exposures may have damaged or will damage human health.

Information Repository: A public file containing technical reports, reference documents, and other materials relevant to the SWMU cleanup.

Land Use Control (LUC): Is broadly interpreted to mean any restriction or control arising from the need to protect human health and the environment, that limits use of and/or exposure to any portion of a given property, including water resources. This term encompasses institutional controls, such as those involving real estate interests, governmental permitting, zoning, public advisories, deed notices, and other legal restrictions. The term may also include restrictions on access, whether achieved by means of engineered barriers such as a fence or concrete pad, or by human means, such as the presence of security guards. Additionally, the term may involve both affirmative measures to achieve the desired restriction (e.g., night lighting of an area) and prohibitive directives (e.g., no drilling of drinking water wells).

No Action: Recommendation or decision indicating no contaminants above regulatory limits.

Permit: A RCRA permit, issued for NAVSTA Mayport, establishes the facility's operating conditions for managing hazardous waste.

GLOSSARY

Public Comment Period: A legally required opportunity for the community to provide written and oral comments on a proposed environmental action.

RCRA Facility Investigation (RFI): Evaluates the nature and extent of the releases of hazardous waste.

Resource Conservation and Recovery Act (RCRA) of 1976: Requires each hazardous waste treatment, storage, and disposal facility to manage hazardous waste in accordance with a permit issued by the USEPA or a state agency that has a hazardous waste program approved by the USEPA.

Response to Comments Summary: A document summarizing the public comments received and the responses to the comments.

Risk Assessment: A study estimating the potential risk a SWMU poses to human health and the environment.

Solid Waste Management Unit: Any discernible unit (to include regulated units) at which RCRA regulated waste has been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste.

Statement of Basis (SB): A public participation document detailing the proposed corrective measure at an SWMU.

Subsurface Soil: Soil that is 2 feet below land surface and deeper.

Surface Soil: Soil that is from 0 to 2 feet below land surface.

United States Environmental Protection Agency (USEPA): The federal agency responsible for implementing United States environmental laws.

This page intentionally left blank.

STATEMENT OF BASIS
Solid Waste Management Unit 3
Naval Station Mayport
Jacksonville, Florida

Your comments on the SWMU 3 proposed corrective action:

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Please include additional comments on a separate page and note the Statement of Basis on which you are commenting (i.e., Statement of Basis for SWMU 3).

Name _____

Address _____

City, State Zip _____

Phone Number (optional) _____

Fax Number (optional) _____

Fold this page in half so that the address on the back is visible, staple or tape closed, stamp, and mail.

**Comments on the Statement of Basis for
Solid Waste Management Unit 3**

Place
Stamp
Here

JOHN WINTERS PG (MS 4535)
FEDERAL PROGRAMS SECTION
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BOB MARTINEZ CENTER
2600 BLAIR STONE ROAD
TALLAHASSEE FL 32399-2400